

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS  
PATENT OF THE UNITED STATES IS:

1. A fluidized bed pulverizing and classifying apparatus comprising:

a vessel comprising:

a pulverizing section comprising a pulverizing nozzle configured to spray  
compressed air to pulverize a powder;

a classifying section located over the pulverizing section, comprising a  
classifying rotor configured to classify the powder; and

a fluidized bed, and

an air supplier configured to supply secondary air.

2. The fluidized bed pulverizing and classifying apparatus of Claim 1, wherein a flow  
rate  $Q_2$  of the secondary air and a flow rate  $Q_1$  of the compressed air of the pulverizing nozzle  
have the following relationship:

$$\frac{Q_1}{20} \leq Q_2 \leq \frac{3Q_1}{20}.$$

3. The fluidized bed pulverizing and classifying apparatus of Claim 1, wherein a  
supplying pressure  $P$  of the secondary air in the fluidized bed pulverizing and classifying  
apparatus is controlled to satisfy the following relationship:

$$-10 \text{ kPa} \leq P \leq 3 \text{ kPa}.$$

4. The fluidized bed pulverizing and classifying apparatus of Claim 1, wherein the air  
supplier supplies the secondary air in a direction tangential to a center of the vessel.

5. The fluidized bed pulverizing and classifying apparatus of Claim 1, wherein the air  
supplier vertically and intermittently sprays the secondary air from the bottom of the vessel  
toward the fluidized bed and the classifying rotor through the pulverizing section.

6. The fluidized bed pulverizing and classifying apparatus of Claim 5, wherein the  
fluidized bed is located below the pulverizing nozzle.

7. The fluidized bed pulverizing and classifying apparatus of Claim 1, further comprising:

a pressure gauge configured to measure a pressure in the vessel, wherein the flow rate of the secondary air is configured to be controlled based on said pressure on said vessel; and

5 a flowmeter located at an exit of the pulverized powder and configured to measure and control an amount of air discharged from the exit.

8. A pulverizing and classifying method comprising:

spraying compressed air from a pulverizing nozzle to pulverize a powder in a vessel

10 while supplying secondary air thereinto; and

classifying the pulverized powder with a classifying rotor in the vessel.